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In the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1-78. (canceled)

79. (new) A mixing apparatus for mixing fuel and air for combustion in a gas turbine, the mixing apparatus comprising:

a body having a mixing channel for mixing fuel and air for combustion, the mixing channel having a main channel portion and a distinct insert channel portion, a fuel inlet being located on the insert channel portion.

80. (new) A mixing apparatus as claimed in claim 79, wherein:

the fuel inlet is located in a portion of the insert channel portion having a curved cross section.

81. (new) A mixing apparatus as claimed in claim 79, wherein:

the insert channel portion comprises a plug attached to one end of the main channel portion, the plug being removable from the body.

82. (new) A mixing apparatus as claimed in claim 79, wherein:

the insert channel portion comprises a pre-calibrated insert of the mixing channel.

83. (new) A mixing apparatus as claimed in claim 79, wherein:

the mixing channel has a curved cross section upstream portion thereof and a transition portion merging to an exit portion with a rectangular cross section, the upstream portion of the mixing channel being tilted relative to the exit portion thereof.

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84. (new) A mixing apparatus as claimed in claim 79, wherein:
the insert channel portion comprises a plug having several primary inlets spaced therearound.
85. (new) A mixing apparatus as claimed in claim 79, wherein:
the mixing channel has a bell-mouth entrance.
86. (new) A mixing apparatus for mixing fuel and air for combustion in a gas turbine, the mixing apparatus comprising:
a body having a mixing channel for mixing air and fuel, the mixing channel in one portion thereof having an at least partly curved cross section.
87. (new) A mixing apparatus as claimed in claim 86, wherein:
the one portion of the mixing channel has an elliptic cross section.
88. (new) A mixing apparatus for mixing fuel and air for combustion in a gas turbine, the mixing apparatus comprising:
a body having a mixing channel for mixing air and fuel, the mixing channel having a fuel inlet section which has a plurality of fuel inlets spaced around a periphery thereof.
89. (new) A mixing apparatus as claimed in claim 79, wherein:
the mixing channel has a height/width aspect ratio ≤ 2 .
90. (new) An apparatus as claimed claim 86, wherein:
the body includes a plurality of said mixing channels, the mixing channels being regularly spaced about a dominant axis of the body.
91. (new) An apparatus as claimed claim 86, wherein:
each mixing channel comprises a bore formed in the body of the apparatus.

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92. (new) An apparatus as claimed in claim 86, wherein:
a plurality of primary fuel inlets are provided.
93. (new) An apparatus as claimed in claim 86, wherein:
a plurality of secondary fuel inlets are provided.
94. (new) An apparatus as claimed in claim 93, wherein:
the secondary fuel inlets have a shield for providing shielded pilot fuel injection.
95. (new) An apparatus as claimed in claim 94, wherein:
a configuration of the shield conforms to an outflow direction of a mixing channel.
96. (new) An apparatus as claimed in claim 94, wherein:
the shield comprises a circular plate for providing shielded flow in a radially inward direction from under the side plate.
97. (new) An apparatus as claimed in claim 96, wherein:
the plate includes at least one hole therethrough enabling pilot fuel to flow in an axial direction through said plate.
98. (new) An apparatus as claimed in claim 86, wherein:
the body has a back plate and each mixing channel is formed in a portion of the body upstanding from the back plate on a fuel side thereof.
99. (new) An apparatus as claimed in claim 93, wherein:
the secondary fuel inlets are adapted to admit fuel at a location outside the mixing channel part.

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100. (new) An apparatus as claimed in claim 93, wherein:
the secondary fuel inlets are adapted to admit fuel into a zone of separated flow on the body.
101. (new) A radial flow swirler for mixing air and fuel for combustion, the swirler comprising:
a body having a primary fuel inlet and a secondary fuel inlet, the secondary fuel inlet being configured for direct injection of pilot fuel.
102. (new) A swirler for mixing air and fuel for combustion, the swirler comprising:
a body having a series of mixing channels, the mixing channels having a bell-mouthed entrance, the mixing channels being generally co-planar with one another and radially inwardly angled in order to induce swirl.
103. (new) A swirler as claimed in claim 102, further including:
a backplate adjacent the mixing channels.
104. (new) A swirler as claimed in claim 102, wherein:
each channel is an elliptical bore.
105. (new) A combustor for burning fuel and air in a gas turbine engine, the combustor incorporating the mixing apparatus as claimed in claim 79.
106. (new) A combustor as claimed in claim 105, wherein:
the combustor has a cylindrical outer casing wall with an end plate, the mixing apparatus being located centrally on the end plate.
107. (new) A method of calibrating a fuel mixer for mixing fuel and air in a gas turbine, the method comprising:

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providing a fuel/air mixing channel having a fuel inlet device formed with a fuel inlet;
calibrating the fuel inlet device; and
then installing the fuel inlet device on to the mixer.

108. (new) A method as claimed in claim 107, wherein:

calibrating the fuel inlet device includes calibrating the device with respect to fuel flow characteristics thereof.

109. (new) An apparatus as claimed in claim 86, wherein:

one or more secondary fuel inlets are provided shielded by an annular ring coaxial with a central axis of the apparatus discharging pilot fuel in a radially inward direction onto a back wall of the apparatus.

110. (new) A swirler as claimed in claim 102, wherein:

the mixing channel leads to a toroidal chamber.

111. (new) A swirler for mixing fuel and air for combusting, the swirler comprising:

a body having at least one mixing channel, wherein the mixing channel leads to a toroidal chamber.

112. (new) A swirler as claimed in claim 111, wherein:

the toroidal chamber has a same height as a height of the mixing channel.